CLAIMS

1. A receiver for receiving a dual code spread spectrum signal, comprising a plurality of diversity antennas, an adaptive forward equal gain combiner having a plurality of branches, each branch being coupled to a respective one of said diversity antennas, means for splitting an output from the combiner into two output channels, means for demodulating the signals in the output channels, means for correlating the signals in each of the output channels with respective ones of the dual spreading codes and means for recovering data from the correlated signals.

2. A receiver as claimed in claim 1, characterised in that said combiner comprises means for selecting a signal in one of said branches as a reference signal and means for co-phasing the signals in the remaining branches with said reference signal.

3. A receiver as claimed in claim 1, characterised in that each of said branches comprises frequency down conversion and phase compensating means, in that a local oscillator is coupled to each of said compensating means, in that each of said compensating means comprises means for adjusting the phase of the local oscillator to minimise the phase difference between the adjusted phase of the local oscillator frequency and the phase of the signal received by the respective branch and means for selecting the branch having a minimum phase deviation with respect to the local oscillator frequency and treating that signal as the reference signal.

4. A receiver as claimed in claim 2, characterised in that each branch comprises a multiplier having a first input for a signal from its antenna and a second input for a phase adjusted local oscillator signal and an output for a difference signal, a filter for removing high order harmonics from the difference signal, a weighting controller having means for producing a weighting signal which is applied to a first phase shifter for adjusting the phase

of the local oscillator signal and a weighting factor related to the selected reference signal, a second phase shifter having an input for a signal derived from the antenna, said second phase shifter having an input for the weighting factor whereby the input signal is co-phased with the selected reference signal, and a signal combiner for combining the selected reference and co-phased signals from the respective branches.

5. A receiver as claimed in claim 4, characterised in that the weighting controller is common to said branches.

6. A receiver as claimed in claim 5, characterised in that the weighting controller comprises a controller for receiving digitised filtered outputs of the respective multipliers, a first memory means storing the weighting signals coupled to the controller, a second memory means storing the weighting factors coupled to the controller, the controller having an outputs coupled respectively to the first and second phase shifters.

7. A communication system comprising first and second transceivers, one of the first and second transceivers having a transmitting section for transmitting dual code spread spectrum signals, and the other of the first and second transceivers having a receiving section comprising antenna diversity means for receiving the signals propagated by said one of the first and second stations, the antenna diversity means comprising a plurality of branches and means for co-phasing the signals in all but one of the branches with the signal in the one of the branches, means for combining the co-phased signals, means for respectively correlating the combined signals with first and second PN spreading codes used for spreading data streams in said transmitting section and means for recovering data from the correlated signals.

8. A system as claimed in claim 7, characterised in that means are coupled to the output of the signal combining means for splitting the combined

signal into two in-phase channels, each of the channels including means for frequency down-converting the signals in its channel and the correlating means for despreading the frequency down converted signals using a respective one of the first and second PN spreading codes, and in that the means for recovering data comprise means coupled to the correlating means in each channel for comparing the despread signals to determine the data output.